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(71) Applicant: **AT&T IPM Corp.**
Coral Gables, Florida 33134 (US)

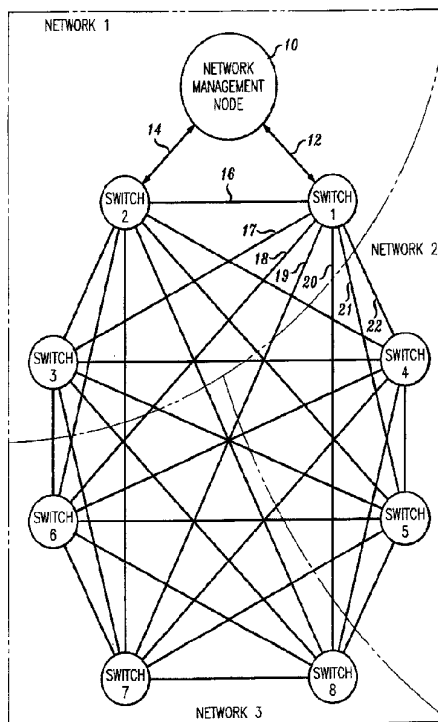
(72) Inventor: **Samba, Augustine Sylvester**
Reynoldsburg, Ohio 43068 (US)

(74) Representative:
Watts, Christopher Malcolm Kelway, Dr. et al
Lucent Technologies (UK) Ltd,
5 Mornington Road
Woodford Green Essex, IG8 0TU (GB)

(54) Network call routing controlled by a management node

(57) A network management node (10) collects trunk loading data and switch congestion data from switches in a telecommunication system. Path loading vectors (52, 56,) constraint vector (66), and switch congestion vector (76) are calculated and compared to yield potential intermediate switch candidates having the lowest available, trunk traffic loading and switches with the lowest congestion consistent with other constraints associated with intermediate switch selection. Trunk groups with increasing levels of traffic and switches with increasing levels of congestion are incrementally tested in order to yield potential intermediate switch candidates whereby call distribution to the lightest loaded trunks and switches is accomplished.

FIG. 1



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	EP 0 386 607 A (GTE LABORATORIES INC) 12 September 1990 (1990-09-12) * page 6, line 3 - line 40; figure 2 *	1-7, 10-16, 19-25	H04Q3/66
A	-----	8,9,17, 18,26-28	
Y	ASH G R ET AL: "REAL-TIME NETWORK ROUTING IN A DYNAMIC CLASS-OF-SERVICE NETWORK" PROCEEDINGS OF THE 13TH INTERNATIONAL TELETRAFFIC CONGRESS (ITC-13), COPENHAGEN, DENMARK, 19-26 JUNE 1991, pages 187-194, XP000303028 * page 188, right-hand column, line 1 - page 189, left-hand column, line 67 *	1-7, 10-16, 19-25	
A	EP 0 610 625 A (AT & T CORP) 17 August 1994 (1994-08-17) * column 1, line 40 - column 2, line 7 * * column 4, line 24 - column 5, line 27 * * column 6, line 15 - line 37 *	1,9,10, 18,19,27	
A	REGNIER J ET AL: "STATE-DEPENDENT DYNAMIC TRAFFIC MANAGEMENT FOR TELEPHONE NETWORKS" IEEE COMMUNICATIONS MAGAZINE, vol. 28, no. 10, pages 42-53, XP000165754 ISSN: 0163-6804 * page 42, section "Overall System Architecture and Data Flow"; figure 1 *	1-28	TECHNICAL FIELDS SEARCHED (Int.Cl.6) H04Q
A	EP 0 426 355 A (AMERICAN TELEPHONE & TELEGRAPH) 8 May 1991 (1991-05-08) * page 5, line 18 - line 57; tables 2-4 *	1-7, 10-16, 19-25	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 November 1999	Examiner Vercauteren, S
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 96 20 0440

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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30-11-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0386607 A	12-09-1990	US 4979118 A	18-12-1990
		AU 637550 B	27-05-1993
		AU 4987090 A	13-09-1990
		CA 2009729 A	10-09-1990
		DE 69029871 D	20-03-1997
		DE 69029871 T	22-05-1997
		JP 2299348 A	11-12-1990
EP 0610625 A	17-08-1994	US 5450482 A	12-09-1995
		CA 2104925 A	30-06-1994
		CN 1091580 A	31-08-1994
		JP 6237293 A	23-08-1994
		MX 9400201 A	29-07-1994
EP 0426355 A	08-05-1991	US 5068892 A	26-11-1991
		DE 69033039 D	12-05-1999
		DE 69033039 T	19-08-1999
		JP 3155253 A	03-07-1991

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82